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INVESTIGATION OF PROTOTYPE VOLCANO--SURVEILLANCE NETWORK

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Type I Progress Report

ERTS-A

- a. Title: Investigation of prototype volcano-surveillance network

ERTS-A Proposal No.: 145

- b. GSFC ID No. of P.I.: IN 384

- c. Problems: The principal problem is getting data rapidly enough from Goddard.

A teletype scheduled to be installed from Goddard to our office in Menlo Park by April 1, 1973, should solve this problem. We found one DCP programmer card that checks out on the platform tester but does not operate properly. Apparently, the data is scrambled in the modulator.

- d. Accomplishments: All equipment was shipped to and received in Central

America. Instruments were installed on Fuego, Agua, Pacaya volcanoes and at Buena Vista, NW of Guatemala City, in Guatemala.

- e. Significant results: Earthquake counters in Guatemala were being installed

between February 13 and 17. The volcano Fuego began erupting ash and ash flows on February 23. On February 17, 6 days before the eruption there were 80 earthquakes at two counters 5 and 15 km

from the volcano (Figure 1). This was a substantial increase over a fairly constant level of 5 events per day recorded for the previous four days. A counter 30 km away did not show an increase.

Had we been operating longer and had the data been sent immediately from Goddard, we might have been able to warn of a possible eruption six days in advance.

- f. Papers or reports: None yet.

- g. Recommendations: None.

- h. Changes in Standing order forms: None.

- i. ERTS Image description forms: None.

k. Status of DCP's presently reporting:

<u>DCP Serial No.</u>	<u>State</u>	<u>County</u>	<u>Town</u>	<u>Latitude</u>	<u>Longitude</u>
6005	Washington	Skamania	Mt. St. Helena	47.75N	122.40W
6057	California	Shasta	Mt. Lassen	40.48N	121.51W
6066	Washington	Whatcom	Mt. Baker	48.78N	121.90W
6163	California	Shasta	Mt. Lassen	40.48N	121.51W
6334	Washington	Pierce	Mt. Rainier	46.94N	121.67W
6342	Alaska	-	Mt. Iliamna	60.18N	152.82W
6365	Alaska	-	Mt. St. Augustine	59.37N	153.35W
6315	Iceland	-	Reykjavik	64.02N	21.85W
6117	Hawaii	-	Kilauea, HVO	19.42N	155.29W
6011	Hawaii	-	Kilauea, Ahua	19.37N	155.26W
6370	Hawaii	-	Kilauea, North Pit	19.42N	155.28W
6240	Guatemala	-	Fuego	14.44N	90.85W
6262	Guatemala	-	Agua	14.44N	90.70W
6132	Guatemala	-	Pacaya	14.40N	90.57W
6103	Guatemala	-	Buena Vista	14.68N	90.63W

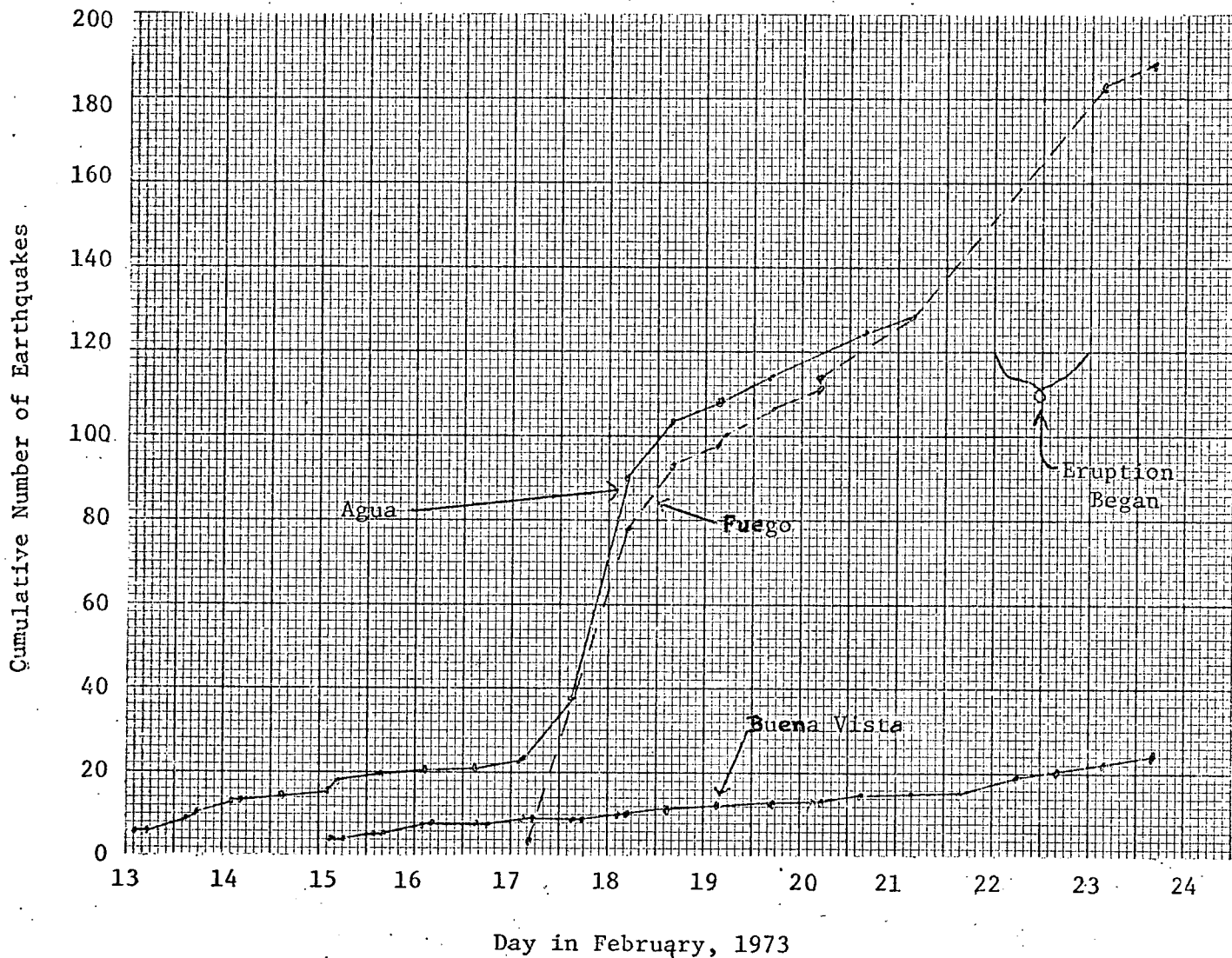


Figure 1: Cumulative number of earthquakes versus time at three event counters in Guatemala prior to the eruption of the volcano Fuego. The counters are approximately 5 km (Fuego); 15 km (Agua), and 30 km (Buena Vista) from the summit of Fuego.